

IN THE CLAIMS:

1. (Original) A method of fabricating a semiconductor device comprises steps of:

forming an active layer over a substrate;
forming an insulating film containing silicon on said active layer;
exposing a portion of said active layer by removing a part of said insulating film containing silicon;
forming a first insulating film over the exposed portion of said active layer;
forming a gate wiring and a second capacitance electrode over said insulating film containing silicon and said first insulating film;
forming a first interlayer insulating film over said gate wiring and said second capacitance electrode;
exposing a portion of said second capacitance electrode by removing a part of said first interlayer insulating film;
forming a second dielectric over the exposed portion of said second capacitance electrode;
forming a light-shielding film over said first interlayer insulating film and said second dielectric;
forming a second interlayer insulating film over said light-shielding film;
forming a source wiring or a drain wiring over said second interlayer insulating film;
forming a third interlayer insulating film over said source wiring or said drain wiring;
and
forming a pixel electrode, over said third interlayer insulating film, electrically connected with said light-shielding film and said drain wiring.

2. (Original) A method according to claim 1, wherein at least one of said first dielectric and said second dielectric is an insulating film formed by a thermal CVD method and containing silicon.

3. (Currently Amended) A method according to claim [[14]] 1, wherein said pixel electrode is an anode or a cathode of an EL element.

4. (New) The method according to claim 1 wherein said semiconductor device is a liquid crystal device.

5. (New) The method according to claim 1 wherein said semiconductor device is an electroluminescence device.

6. (New) The method according to claim 1 wherein said semiconductor device is a portable information terminal.

7. (New) The method according to claim 6 wherein said portable information terminal is a mobile computer.

8. (New) The method according to claim 6 wherein said portable information terminal is a portable telephone.

9. (New) The method according to claim 6 wherein said portable information terminal is a portable-type game equipment.

10. (New) The method according to claim 6 wherein said portable information terminal is an electronic book.

11. (New) The method according to claim 1 wherein said semiconductor device is a camera.

12. (New) The method according to claim 1 wherein said semiconductor device is a projector.

13. (New) A method of manufacturing a semiconductor device comprising the steps of:

forming at least one semiconductor island comprising silicon on an insulating surface;
forming a first insulating film over said semiconductor island;

removing a portion of the first insulating film so that a first portion of the semiconductor island is exposed while a second portion of the semiconductor island is covered by the first insulating film;

performing a thermal oxidation on said semiconductor island so that a surface of the first portion of the semiconductor island is oxidized to form a first dielectric of a first capacitor on the first portion of the semiconductor island;

forming a conductive film over the first insulating film and the first dielectric;

patterning the conductive film to form a gate electrode and a first capacitor electrode wherein the gate electrode is located over the second portion of the semiconductor island and the first capacitor electrode is located over the first portion of the semiconductor island;

forming a first interlayer insulating film over the gate electrode and the first capacitor electrode;

forming an opening in the first interlayer insulating film so that at least a portion of the first capacitor electrode is exposed in the opening;

forming a second dielectric of a second capacitor on the first capacitor electrode;

forming a second capacitor electrode over the first capacitor electrode with the second dielectric interposed therebetween;

forming a second interlayer insulating film over the second capacitor electrode; and

forming a pixel electrode over the second interlayer insulating film,

wherein said pixel electrode is electrically connected to said semiconductor island.

14. (New) The method according to claim 13 wherein said semiconductor device is a liquid crystal device.

15. (New) The method according to claim 13 wherein said semiconductor device is an electroluminescence device.

16. (New) The method according to claim 13 wherein said semiconductor device is a portable information terminal.

17. (New) The method according to claim 16 wherein said portable information terminal is a mobile computer.

18. (New) The method according to claim 16 wherein said portable information terminal is a portable telephone.

19. (New) The method according to claim 16 wherein said portable information terminal is a portable-type game equipment.

20. (New) The method according to claim 16 wherein said portable information terminal is an electronic book.

21. (New) The method according to claim 13 wherein said semiconductor device is a camera.

22. (New) The method according to claim 13 wherein said semiconductor device is a projector.

23. (New) A method of manufacturing a semiconductor device comprising steps of:

forming at least one semiconductor island comprising silicon on an insulating surface;
forming a first insulating film over said semiconductor island;

removing a portion of the first insulating film so that a first portion of the semiconductor island is exposed while a second portion of the semiconductor island is covered by the first insulating film;

forming a first dielectric of a first capacitor on the first portion of the semiconductor island wherein said first insulating film is thicker than the first dielectric;

forming a gate electrode and a first capacitor electrode wherein the gate electrode is located over the second portion of the semiconductor island and the first capacitor electrode is located over the first portion of the semiconductor island;

forming a first interlayer insulating film over the gate electrode and the first capacitor electrode;

forming an opening in the first interlayer insulating film so that at least a portion of the first capacitor electrode is exposed in the opening;

forming a second dielectric of a second capacitor on the first capacitor electrode;

forming a second capacitor electrode over the first capacitor electrode with the second dielectric interposed therebetween;

forming a second interlayer insulating film over the second capacitor electrode; and

forming a pixel electrode over the second interlayer insulating film,

wherein said pixel electrode is electrically connected to said semiconductor island.

24. (New) The method according to claim 23 wherein said semiconductor device is a liquid crystal device.

25. (New) The method according to claim 23 wherein said semiconductor device is an electroluminescence device.

26. (New) The method according to claim 23 wherein said semiconductor device is a portable information terminal.

27. (New) The method according to claim 26 wherein said portable information terminal is a mobile computer.

28. (New) The method according to claim 26 wherein said portable information terminal is a portable telephone.

29. (New) The method according to claim 26 wherein said portable information terminal is a portable-type game equipment.

30. (New) The method according to claim 26 wherein said portable information terminal is an electronic book.

31. (New) The method according to claim 23 wherein said semiconductor device is a camera.

32. (New) The method according to claim 23 wherein said semiconductor device is a projector.

33. (New) A method of manufacturing a semiconductor device comprising steps of:

forming at least one semiconductor island comprising silicon on an insulating surface;

forming a first insulating film over said semiconductor island;

removing a portion of the first insulating film so that a first portion of the semiconductor island is exposed while a second portion of the semiconductor island is covered by the first insulating film;

forming a first dielectric of a first capacitor on the first portion of the semiconductor island wherein said first insulating film is thicker than the first dielectric;

forming a gate electrode and a first capacitor electrode wherein the gate electrode is located over the second portion of the semiconductor island and the first capacitor electrode is located over the first portion of the semiconductor island;

forming a protective film on the gate electrode, the first capacitor electrode the first insulating film, and a first dielectric wherein the protective film comprises silicon, oxygen and nitrogen;

forming a first interlayer insulating film on the protective film;

forming an opening in the first interlayer insulating film and the protective film so that at least a portion of the first capacitor electrode is exposed in the opening;

forming a second dielectric of a second capacitor on the first capacitor electrode;

forming a second capacitor electrode over the first capacitor electrode with the second dielectric interposed therebetween;

forming a second interlayer insulating film over the second capacitor electrode; and

forming a pixel electrode over the second interlayer insulating film,

wherein said pixel electrode is electrically connected to said semiconductor island.

34. (New) The method according to claim 33 wherein said semiconductor device is a liquid crystal device.

35. (New) The method according to claim 33 wherein said semiconductor device is an electroluminescence device.

36. (New) The method according to claim 33 wherein said semiconductor device is a portable information terminal.

37. (New) The method according to claim 36 wherein said portable information terminal is a mobile computer.

38. (New) The method according to claim 36 wherein said portable information terminal is a portable telephone.

39. (New) The method according to claim 36 wherein said portable information terminal is a portable-type game equipment.

40. (New) The method according to claim 36 wherein said portable information terminal is an electronic book.

41. (New) The method according to claim 33 wherein said semiconductor device is a camera.

42. (New) The method according to claim 33 wherein said semiconductor device is a projector.